

### **REMARKS**

Applicant has carefully reviewed and considered the Office Action mailed on November 2, 2005, and the references cited therewith. Reconsideration and further examination of this application is hereby requested.

Claim 17 was amended to include all limitations of Claim 16, and Claim 19 was amended to correct an error in dependency. Claims 1 - 9 and 16 are canceled. Claim 10 - 15 and 17 - 19 are now pending in this application. No new matter has been added.

#### **' 102 Rejection of the Claims**

Nelson, et al. Claims 10 and 16 - 17 were rejected under 35 USC § 102(b) as being anticipated by Nelson, et al. (U.S. Patent 4,118,756). Applicant traverses the Examiner's rejection. According to the Examiner (referring to Fig. 2, col. 5, lines 7 - 26), Nelson, et al. teaches applying sufficient heat to cause the metal felt (24) to adhere and bond to both the porous metal exoskeleton member (25) and the metal substrate (21). Applicants respectfully state, however, that this is not what the Nelson, et al. reference teaches. The Nelson, et al. reference fails to teach each and every element of Applicants' claimed invention, and therefore, the rejection is improper and should be withdrawn.

In referring to the "artery wick (25)", which the Examiner evidently considers to be analogous to Applicants' claimed porous metal exoskeleton member, Nelson, et al. state, "the sintered metal artery wicks may be made slightly oversize so that they are pressed against the evaporator and condenser wicks when the heat pipe is assembled, or alternatively they may be bonded by sintering the powdered metal in place in the heat pipe prior to final assembly." (Col. 5, lines 16 - 21.) The first option described in the reference has to do with pressing the artery wick against the evaporator, which the Examiner evidently views to be analogous to Applicants' claimed metal felt. Clearly, "press against" differs from "adhere" as recited in Applicants' claim 10.

In describing the alternative option, the reference likewise fails to teach Applicants' claimed elements of metal felt adhering to both the porous metal exoskeleton member and the

metal substrate. The language in the reference is subject to several possible interpretations, and all that can be definitively ascertained from the language in the reference is that the artery wicks are “bonded” in some fashion through the action of “sintering the powdered metal” that comprises the artery wick material. The reference does not say *what* the artery wicks are *bonded to*. Indeed, one reasonable interpretation of the language in the reference is that the “bonding” refers to the melting together of the powdered metal in the sintering process resulting in formation of the artery wick structures, themselves. Certainly it does not say that the artery wicks are bonded to the evaporator wick.

The language farther on in the reference offers no compelling support for the Examiner’s position, either. The words, “in place in the heat pipe”, again, are subject to various interpretations, but none of those interpretations necessarily leads to the conclusion that the artery wicks are bonded to the evaporator wick. For example, the language could mean that the artery wicks are *caused to become a coherent mass* (bonded) in place in the heat pipe (distinguishing, for example, from an alternate method of assembly such as sintering the wicks externally and then placing them inside the heat pipe). Another interpretation could be that the artery wicks are *secured* (bonded) in place in the heat pipe. Even reading the language in this way, though, nothing in the reference says that the artery wicks are secured to the evaporator wick. Applying this interpretation, the artery wicks could just as well be secured to some other fixture in the heat pipe.

The rejection of Claim 10 is improper because Nelson, et al. reference fails to teach causing a porous metal felt (which the Examiner associates with the evaporator wick 24 in the reference) to adhere to both a porous metal exoskeleton (which the Examiner associates with the artery wick 25 in the reference) as well as to a metal substrate (upper or lower portion of the thermal mounting plate 21 or 22). The prior art does not teach Applicants’ invention as recited in Claim 10. Therefore, that claim is patentable and should be allowed.

Claim 16 has been canceled. Amended claim 17, however, remains in the application. Claim 17 includes the element of bonding the wick material to both the rigid substrate and the rigid porous exoskeleton member. Applying the same analysis as above with respect to Claim 10, the Nelson, et al. reference fails to teach bonding the wick material to both the substrate and

the porous exoskeleton member. The prior art does not teach Applicants' invention as recited in amended claim 17. Therefore, that claim is patentable and should be allowed.

Arcella Claims 10 and 16 – 17 were rejected under 35 USC § 102(b) as being anticipated by Arcella (U.S. Patent 3,857,441). Applicant traverses the Examiner's rejection. According to the Examiner (referring to Fig. 2, and col. 2, lines 12 - 14), Arcella teaches positioning of various elements that the Examiner apparently considers analogous to Applicants' claimed elements, and applying "sufficient heat (tack welding) . . . to cause the metal felt (14) to adhere to the porous metal exoskeleton member (30 . . .) and the metal substrate."

The reference, however, does not teach Applicants' claimed step of applying heat sufficient to cause the metal felt to adhere to both the porous metal exoskeleton member and the metal substrate. There is no teaching whatsoever in Arcella about heating sufficiently to cause the wick structure in the reference to adhere to the heat pipe tube inner walls, and tack welding is offered only as a possible option in conjunction with tightly rolling the wick structure onto the restrainer tube. Because Arcella fails to disclose Applicants' claimed step of applying heat sufficient to cause the metal felt to adhere to *both* the porous metal exoskeleton member and the metal substrate this rejection under 35 U.S.C. § 102(b) is overcome. The prior art does not teach Applicants' invention as recited in Claim 10. Therefore, that claim is patentable and should be allowed.

#### '103 Rejection of the Claims

Arcella in view of Valyi Claim 11 was rejected under 35 USC § 103(a) as being unpatentable over Arcella in view of Valyi (US Patent 3,428,126). According to the Examiner, Arcella teaches the invention with the exception of applying brazing material, and it would have been obvious to one of ordinary skill in the art to have provided Arcella with a suitable braze material as taught by Valyi.

As noted above, with respect to the '102 rejections based on Arcella, that reference fails to teach each and every element of independent Claim 10, from which Claim 11 depends. Valyi, for example, does not teach Applicants' claimed element "applying heat sufficient to cause the metal felt to adhere to both the porous metal exoskeleton member and the metal substrate", also missing from the Arcella reference.

None of the prior art cited by the Examiner, taken alone or in combination, teaches Applicants' invention as recited in Claim 10. Therefore, that claim is patentable and should be allowed.

Arcella in view of Breton, et al. Claim 12 was rejected under 35 USC § 103(a) as being unpatentable over Arcella in view of Breton, et al. (US Patent 3,984,044). According to the Examiner, Arcella teaches the invention with the exception of applying grit blasting, and it would have been obvious to one of ordinary skill in the art to have provided Arcella with a suitable means of surface preparation as taught by Breton, et al.

Again, as noted above, with respect to the '102 rejections based on Arcella, that reference fails to teach each and every element of independent Claim 10, from which Claim 12 depends. Breton, et al., for example, does not teach Applicants' claimed element "applying heat sufficient to cause the metal felt to adhere to both the porous metal exoskeleton member and the metal substrate", also missing from the Arcella reference.

None of the prior art cited by the Examiner, taken alone or in combination, teaches Applicants' invention as recited in Claim 12. Therefore, that claim is patentable and should be allowed.

Arcella and Valyi and further in view of Breton, et al. Claim 13 was rejected under 35 USC § 103(a) as being unpatentable over Arcella and Valyi in view of Breton, et al. Once again, with respect to the '102 rejections based on Arcella, that reference fails to teach each and every element of independent Claim 10, from which Claim 13 depends. Valyi and Breton, et al., for example, do not teach Applicants' claimed element "applying heat sufficient to cause the metal felt to adhere to both the porous metal exoskeleton member and the metal substrate", also missing from the Arcella reference.

None of the prior art cited by the Examiner, taken alone or in combination, teaches Applicants' invention as recited in Claim 13. Therefore, that claim is patentable and should be allowed.

Arcella in view of Henne, et al. Claims 18 and 19 were rejected under 35 USC § 103(a) as being unpatentable over Arcella in view of Henne, et al. According to the Examiner, Arcella teaches the invention with the exception of the single step application of adhesive, and it would

have been obvious to one of ordinary skill in the art to have provided Arcella with a suitable bonding step as taught by Henne

Again, with respect to the '102 rejections based on Arcella, though, that reference fails to teach each and every element of Claim 17, from which Claims 18 and 19 depend. Henne, et al., for example, does not teach Applicants' claimed element "applying heat sufficient to cause the metal felt to adhere to both the porous metal exoskeleton member and the metal substrate", also missing from the Arcella reference.

None of the prior art cited by the Examiner, taken alone or in combination, teaches Applicants' invention as recited in Claims 18 and 19. Therefore, those claims are patentable and should be allowed.

Allowable Subject Matter

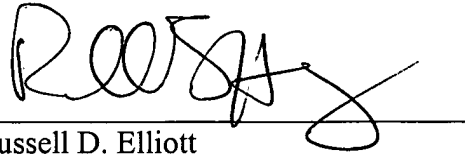
Applicants acknowledge the Examiner's objection to Claims 14 and 15 and his statement that they would be allowable if rewritten. Applicants' respectfully defer any amendment of those claims until such time as the Office has had the opportunity to consider the arguments and amendments presented in this Amendment and Response to Office Action under 37 C.F.R. § 1.111.

Conclusion

Applicants respectfully submit that the claims are in condition for allowance and notification to that effect is earnestly requested. The Examiner is invited to telephone Applicant's attorney (505-844-5626) to facilitate prosecution of this application.

If necessary, please charge any additional fees or credit overpayment to Deposit Account  
No. 10-0131

Respectfully submitted,

A handwritten signature in black ink, appearing to read "Russell D. Elliott", written over a horizontal line.

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